

I INTRODUCTION

Chronic pelvic pain (CPP) and pelvic floor myalgia is still underrecognized and true incidence is unknown. Despite uncertain etiologies, it is now recognized that successful management of CPP is only possible utilizing a multidisciplinary and multimodal approach¹. Physical therapy has been studied as an effective component of a multimodal approach².

Pain catastrophizing is prevalent at clinically relevant levels in patients with CPP. Past studies have associated pain catastrophizing with higher pain levels and decreased quality of life³. Higher pain catastrophizing scores have also been correlated to worse health outcomes^{4,5}. Pain catastrophizing behavior is captured by the validated Pain Catastrophizing Scale (PCS)⁶, utilized across many different specialties. The severity of pain in patients with urological chronic pain syndrome is assessed with a variety of validated patient-reported outcome surveys, such as Genitourinary Pain Index (GUPI)⁷ and Pelvic Floor Disability Index (PFDI)⁸. To date, there has been no study investigating the relationship between pain catastrophizing and its effects on pelvic floor physical therapy.

II OBJECTIVES

The primary purpose of this study is to determine if a patient's pain catastrophizing behavior influences CPP outcomes after pelvic floor physical therapy. By investigating the relationship between a patient's catastrophizing score on PCS and their outcomes on GUPI and PFDI, this study evaluates whether pain catastrophizing behavior limits the success of pelvic floor physical therapy treatment.

III MATERIALS & METHODS

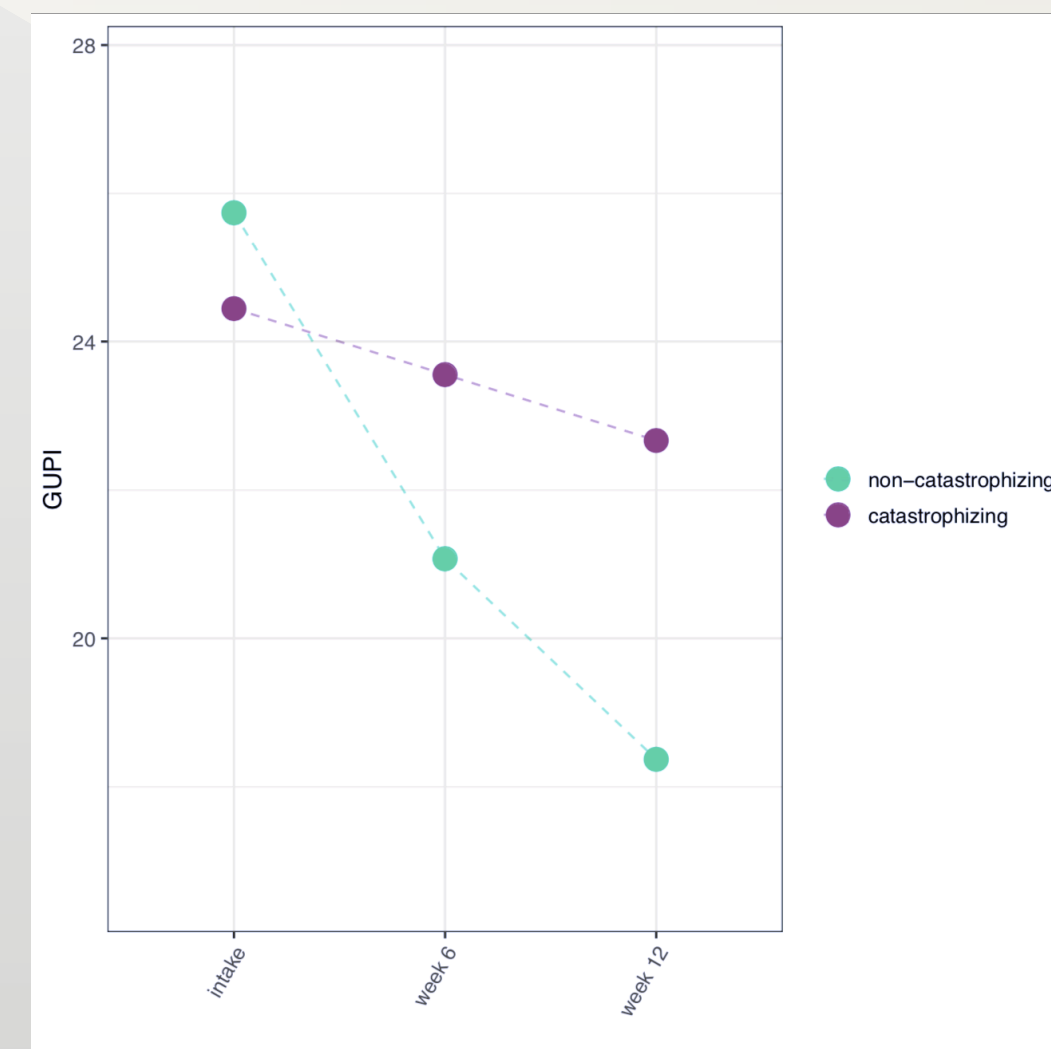
This single-site cross-sectional retrospective chart review study was approved by the institutional review board at Northwell Health. A waiver of informed consent was granted for this HIPAA-complaint retrospective study design. Demographic and baseline clinical information such as comorbidities, psychiatric history, past surgical history, and history of trauma, was collected and inputted in Northwell REDCap. Statistical analysis was conducted in SPSS⁹ and Rstudio¹⁰.

Male and female patients between 18-80 years old referred to a tertiary urology department in New York for CPP and/or pelvic floor myalgia, who received pelvic floor physical therapy as part of their treatment, were included in the study. Licensed pelvic floor therapists offered weekly manual-type physical therapy, both external and internal, to help relax pelvic floor muscles. Therapists taught diaphragmatic breathing and relaxation techniques, as well as stretching techniques for the whole body. Patients were instructed to follow various types of home programs such as taking warm baths, using heating pads or cold packs, using pelvic wands or dilators, or practicing self-stretching methods to decrease their pelvic pain.

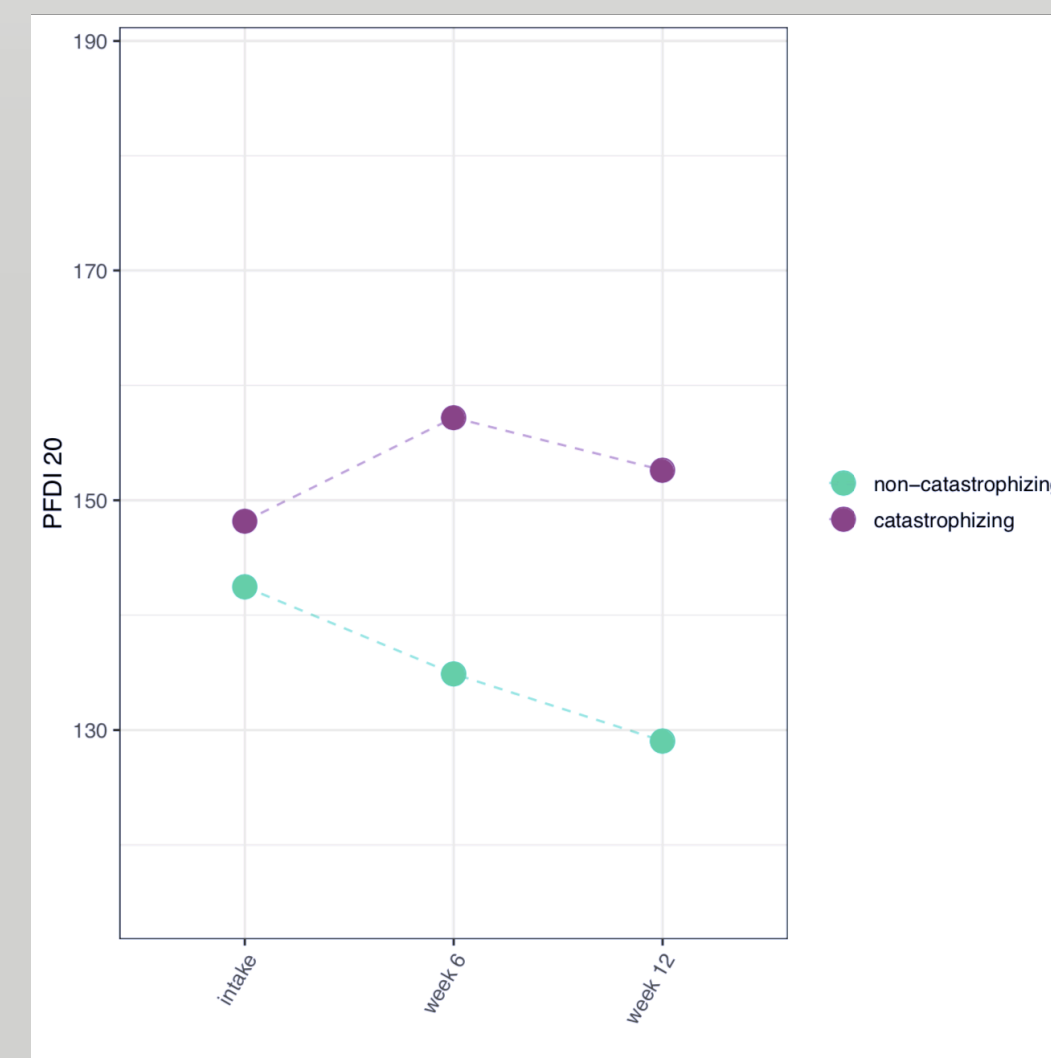
Patients filled out three validated survey instruments at their initial evaluation appointment, 6-week follow up appointment, and 12-week follow up appointment. These three validated survey instruments were the 6-item short form Pain Catastrophizing Scale (PCS), Genitourinary Pain Index (GUPI), and Pelvic Floor Disability Index (PFDI-20). The PFDI-20 survey is a composite of the Pelvic Organ Prolapse Distress Inventory, Colorectal-Anal Distress Inventory, and the Urinary Distress Inventory. Patients were assigned into the catastrophizing cohort if their PCS scores were >20 at any time point. Patients' changes on their GUPI and PFDI scores were compared utilizing two sample t-tests, mixed-effects ANOVA, and non-parametric testing.

IV RESULTS

Out of the 47 patients reviewed, 40 were included in the final analysis. Six patients were excluded due to lack of complete intake survey data and one patient was discharged from pelvic therapy after the 6th session due to resolution of symptoms. 36 patients were female (90%) and 4 patients were male (10%). On average, these 40 patients were 40.65 years old \pm 15.90, with BMI 24.28 ± 4.61 and had 5.28 ± 2.78 comorbidities. In addition, 37.5% of this cohort had one or more psychiatric co-morbidity. The 75th percentile score on the PCS scale was 20. Of the 40 patients included, 22.5% were catastrophizing patients (n=9 whose PCS > 20) while 77.5% were non-catastrophizing patients (n=31 whose PCS \leq 20). After 12 weekly PT sessions, 51.61% of non-catastrophizing patients saw improvement in both their GUPI and PFDI scores while only 22.22% of catastrophizing patients saw improvements (p=0.045). Non-catastrophizing patients showed a mean decrease of 6.825 on the GUPI and 13.00 on the PFDI at 3 months. Conversely, catastrophizing patients showed a mean decrease of 1.78 on the GUPI and an increase of 4.21 on the PFDI. Comorbidities, pain medications, gender, and past abdominal or genitourinary surgeries were not predictive of physical therapy outcomes.



Graph 1: Longitudinal Changes to Genitourinary Pain Index (GUPI)



Graph 2: Longitudinal Changes to Pelvic Floor Disability Index Changes (PFDI)

V CONCLUSIONS

This is the first study evaluating pain catastrophizing behavior and how it affects pelvic floor physical therapy outcomes. The preliminary data suggests that pain catastrophizing limits the benefits of pelvic floor physical therapy, as assessed by GUPI and PFDI. These results indicate that patients who score higher than 20 on PCS require additional support or treatment modalities in order to alleviate pelvic pain symptoms and improve pelvic function. These results encourage further research on standardizing additional treatment options for patients with high catastrophizing tendencies, such as cognitive-behavioral therapy or other psychosocial modalities.

Future research directions may entail evaluating more granular data: the GUPI subscales and PFDI subscales. Specifically, the pain subscale within GUPI and the urinary distress inventory subscale within PFDI may offer more insight into the relationship between pain and function in catastrophizing patients. There is potential in investigating the predictive nature of pain catastrophizing behavior on other CPP treatments, such as injections and nerve blocks. Treatment options that target and decrease catastrophizing behavior should also be studied in order to improve overall pain outcomes and symptoms related to CPP.

VI REFERENCES

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